

Appl. No. 10/645,497
Art Unit 3617
October 19, 2004
Reply to Office Action of July 27, 2004

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the present application.

Listing of Claims:

1. (**Currently Amended**) A method of assembling a tire and a wheel rim, comprising the steps of:

(1) determining a Radial Runout (RRO) value ~~Wr1~~ (Wr1) (unit: mm) in a primary component of the RRO of the wheel rim, a phase ~~θ_{r1}~~ (θ_{r1}) (unit: °) of a peak position ~~thereof~~, (P) corresponding to the maximum crest portion of the primary wave form, an unbalance level ~~Wub~~ (Wub) (unit: g) of a heavy point in a weight unbalance of the wheel rim, a phase ~~θ_{ub} thereof (unit: °)~~, (θ_{ub}) (unit: °) of said unbalance level (Wub), a radial distance ~~L~~ (L) (unit: mm) of a balance weight mounting position for correcting the weight unbalance from an axis center of the wheel rim, a weight ~~Tt~~ (Tt) (unit: mm) of the tire, and a phase ~~α_t~~ (α_t) of a light point in the weight unbalance of the tire;

(2) determining a phase ~~θ_e~~ (θ_c) of a correction unbalance ~~We~~ (Wc) found by the following formula (1), by using the RRO value ~~Wr1~~, (Wr1), the phase ~~θ_{r1}~~ , (θ_{r1}), the unbalance level ~~Wub~~, (Wub), the phase ~~θ_{ub}~~ , (θ_{ub}), the distance ~~L~~, (L), the weight ~~Tt~~ (Tt) and the phase ~~α_t~~ (α_t) determined in the preceding step; and

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$$\theta_c = \tan^{-1} \left[\frac{W_{ub} \times \sin \theta_{ub} + \left\{ (W_{r1} \times T_t) / (2 \times L) \right\} \times \sin \theta_{r1}}{W_{ub} \times \cos \theta_{ub} + \left\{ (W_{r1} \times T_t) / (2 \times L) \right\} \times \cos \theta_{r1}} \right] \dots (1)$$

(3) assembling the tire and the wheel rim in a state of aligning the phase θ_e (θ_c) of the correction unbalance W_c with the phase ~~α_t~~ (α_t) of the light point of the tire.

2. (**New**) The method of assembling a tire and a wheel rim according to claim 1, wherein said RRO is measured using a contact type displacement gauge.